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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/640,552	08/17/2000	Johannes Ilg	051480-5028	4858

23640 7590 04/02/2004

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ART UNIT	PAPER NUMBER
2635	13

DATE MAILED: 04/02/2004

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 13

Application Number: 09/640,552
Filing Date: August 17, 2000
Appellant(s): ILG, JOHANNES

Scott J. Anchell, Reg. No. 35,035
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12 January 2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1 - 11 and 14 - 17 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,265,963	Wood, Jr.	07-2001
5,412,379	Waraksa et al.	05-1995
6,130,623	MacLellan et al.	10-2000
6,169,474	Greeff et. al.	01-2001
3,750,168	Schrader et al.	07-1973
5,710,548	LeMense	01-1998
6,461,386	Knebelkamp	10-1995
5,838,257	Lambropoulos	11-1998
5,157,389	Kurozu et al.	10-1992

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

A. Claim 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood, Jr. U.S. Patent No. 6,265,963 in view of Waraksa et al. U.S. Patent No. 5,412,379, and further in view of MacLellan et al. U.S. Patent No. 6,130,623.

Referring to Claim 1, Wood, Jr. teaches a device for identifying authentic information and enabling an action, the device comprising: (a) key unit (hereinafter referred to as "device 12") for transmitting information to a base unit and a base unit (hereinafter referred to as "interrogator 26") for detecting the information sent by a key unit, comparing it with predetermined information, and enabling the action when the detected information matches the predetermined information (see Fig. 4, device 12 and interrogator 26; Col. 1, lines 64 - 67; Col. 2, lines 1 - 4; and Col. 19, lines 53 - 64; (b) interrogator 26 and device 12 each having a digital

generator (see Col. 13, lines 37 - 67 and Col. 14, lines 1 - 65); (c) device 12 combining the digital information of its digital generator with a stored identification code in accordance with a predetermined coding rule to form a coded information item (see Col. 5, lines 19 - 23 and Col. 15, lines 4 - 35); (d) interrogator 26 enabling the action when the coded information item received from device 12 matches the predetermined information item (see Col. 15, lines 30 - 35 and Col. 19, lines 53 - 64); (e) interrogator 26 transmitting a radio frequency (RF) carrier signal (see Col. 4, lines 57 - 59); (f) device 12 including a controllable electronic switch switching an antenna between essentially matched and mismatched states in accordance with the coded information item, and the antenna reflecting the received RF carrier signal in accordance with the digital coded information (see Col. 14, lines 42 - 65); and (g) interrogator 26 receiving and evaluating the reflected signal (see Col. 5, lines 13 - 23 and Col. 19, lines 53 - 64). Wood fails to teach: (1) interrogator 26 and device 12 both having accurately-timed digital generators running essentially synchronously with respect to one another and generating digital output information that changes at predetermined time intervals; and (2) interrogator 26 using the predetermined coding rule to code the predetermined information with the digital information of its digital generator to form a predetermined coded information item and comparing the predetermined coded information item with the coded information item communicated by device 12.

In an analogous art, Waraksa imparts a receiver/controller 100 or base unit and a beacon/transmitter 24 or key unit, wherein the transmitted signal between the beacon and receiver is continuously changing in order to deter theft (see Abstract). Receiver/controller 100 has a quartz crystal 110 (see Fig. 13a), and beacon/transmitter 24 has a quartz crystal 46 (see Fig. 5) for ensuring that the digital generators of both devices are running essentially

synchronously with respect to each other and generating CLOCK code or digital output information that changes approximately every 5 seconds (see Col. 2, lines 38 - 43; Col. 8, lines 46 - 52; and Col. 13, lines 61 - 67).

In another analogous art, MacLellan's base unit, which is understood to be formed by an application processor and interrogator as shown in Fig. 4, receives a tag's identification (ID) at 402. The interrogator then sends a random challenge (or digital information) generated by its random number generator (or digital generator) to the application processor at 403 and to the tag at 404. The application processor forms a response or predetermined coded information item at 405 using the encryption/encoding information associated with the tag's ID information while the tag also forms a response. The interrogator receives the responses from the application processor and tag at 407 and 408 respectively, compares the responses, determines if there is a match, and notifying the application processor and tag whether the transaction is accepted or rejected at 409 and 410.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Wood, Jr. as taught by Waraksa because a code that is continuously changed at predetermined intervals deters theft.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Wood, Jr. as taught by MacLellan because having interrogator 26 and device 12 both generate simultaneously the predetermined coded information item and then having interrogator 26 comparing both coded information items eliminate the need to decode the received coded information prior to the comparison, thus reducing verification time.

Regarding Claim 11, Wood's device 12 includes: (a) microcontroller 34 or central evaluating and control unit for controlling transmitter 32 and receiver 30 (see Fig. 5; Col. 12, lines 62 - 67; and Col.13, lines 1 - 11); and (b) an identification code memory located in microcontroller 34 (see Col. 5, lines 19 – 23; Col. 13, lines 1 – 11; and Col. 19, lines 61 – 64). Wood, however, omits teaching that device 12 has a ring-connected shift register that is loaded at predetermined time intervals with a different coded information item generated by the coding unit using the digital information from the digital generator and contents of the identification code memory and that the shift register cyclically reads out the different coded information.

Waraksa teaches a method for generating a changing or rolling beacon code (see Fig. 9; Col. 10, lines 62 – 68; Col. 11, lines 1 – 31 and 59 – 68; and Col. 12, lines 1 – 8). Because the clock code is changed every 5 seconds (see Col. 8, lines 46 – 52), it is understood that error correction code (ECC) encoder 60 is a ring-connected shift register that is loaded every 5 seconds using transformation coded created from the clock code generated by clock 57 (or digital generator) and the 20-bit identification stored in register 63.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify device 12 of Wood as taught by Waraksa because a code that is continuously changed at predetermined intervals deters theft.

B. Claims 2, 4 – 6, 10, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood, Jr. U.S. Patent No. 6,265,963, Waraksa et al. U.S. Patent No. 5,412,379, and MacLellan et al. U.S. Patent No. 6,130,623 as applied to claim 1 above, and further in view of Greeff et al. U.S. Patent No. 6,169,474.

Regarding Claims 2 and 10, interrogator 26 of Wood, Jr., Waraksa, and MacLellan includes: (a) a central evaluating and control unit formed by host computer 48 (see Wood, Fig. 4; Col. 4, lines 64 - 67; Col. 5, lines 1 - 6 and 13 - 16; and Col. 8, lines 12 - 14); and (b) an RF generator (see Wood, Col. 4, lines 57 - 59 and Col. 8, lines 45 - 57). Because the interrogation signal transmitted by interrogator 26 contains data (see Wood, Col. 13, lines 37 - 67 and Col. 14, lines 1 - 40), it is inherent that interrogator 26 has a modulator between the RF generator and the antenna. Wood, Jr., Waraksa, and MacLellan, however, fail to teach that the RF generator is connected to an antenna by a power amplifier.

In an analogous art, the RF circuitry of Greeff's interrogator 26, as shown in Fig. 7, includes a power amplifier 19 for amplifying the interrogation signal (see Col. 9, lines 8 -10).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the interrogator 26 of Wood, Jr., Waraksa, and MacLellan as taught by Greeff because a power amplifier minimizes signal losses and improves efficiency.

Regarding Claim 4, as shown in Fig. 4, Wood's interrogator 26 uses only one antenna to transmit and receive signals. Because the use of circulators is well known to those of ordinary skill in the art, it is understood that interrogator 26's transmitter and receiver are connected to antenna 28 via a circulator.

Regarding Claim 5, Wood teaches that interrogator 26 is able to send commands to device 12 to change the modulation scheme (see Col. 10, lines 43 - 51). Because interrogator 26 is able to receive device 12's modulated backscatter reflections and determine if device 12's identification is valid (see Col. 19, lines 53 - 64), it is inherent that interrogator 26's receiving circuit has a demodulator that receives essentially all the received signal's power and supplies the demodulated signal to host computer 48.

Regarding Claim 6, Wood, Jr., Waraksa, and MacLellan fail teach that device 12's return link is differential phase shift key (DPSK) modulated onto a square wave subcarrier (see Wood, Jr., Col. 14, lines 52 - 54) but fail to impart that interrogator 26's demodulator is supplied with the carrier signal of the RF generator and correlates the carrier signal with the signal received by the antenna for the purpose of demodulation.

Greeff's interrogator 26, as shown in Fig. 7, comprises a frequency synthesizer 75, power divider 73, and quadrature down-converter 84. Upon receiving a signal at antenna R1, low noise amplifier (LNA) 82 amplifies the signal, and quadrature down-converter 84 coherently downconverts the received signal using output from frequency synthesizer 75, which supplies the carrier frequency (see Col. 8, lines 59 - 60 and Col. 9, lines 18 - 27). After setting the amplitude of down-converter 84's outputs, the resulting I and Q signals are passed on to the DPSK circuitry 52 for demodulation. Here it is understood that down-converter 84, automatic gain controls 86 and 88, and DPSK circuitry 52 form a demodulator.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the interrogator 26 of Wood, Jr., Waraksa, and MacLellan as taught by Greeff because it is necessary to correlate with carrier signal with the backscattered or reflected return link or received signal in order to isolate the DPSK modulated subcarrier.

Regarding Claim 17, Wood, Jr., Waraksa, and MacLellan are silent on using a multiplier as a modulator. However, the Examiner takes Official Notice that the use of a multiplier as a modulator is a well known. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to the modulator of Wood, Jr., Waraksa, and MacLellan is a multiplier since the Examiner takes Official Notice that the use of a multiplier as a modulator is a well known and eliminates the need for mechanical switches.

C. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood, Jr. U.S. Patent No. 6,265,963, Waraksa et al. U.S. Patent No. 5,412,379, MacLellan et al. U.S. Patent No. 6,130,623, and Greeff et al. U.S. Patent No. 6,169,474 as applied to claim 2 above, and further in view of Schrader et al. U.S. Patent No. 3,750,168.

Regarding Claims 3 and 9, Wood, Jr., Waraksa, MacLellan, and Greeff fail to teach that interrogator 26's RF carrier signal is frequency modulated with a triangular function and that interrogator 26's evaluating and control unit of a base unit is able to separate a number of superimposed signals from a plurality of device 12 at different distances by evaluating a displacement spectra due to the different distances from the base unit and evaluating collisions of the received information items.

In an analogous art, Schrader teaches a base unit located in an aircraft that is able to receive many reply signals from transponders located on intruding aircrafts and is able to distinguish the signal from the most hazardous intruding aircraft from the other signals (see Abstract). Per Schrader, the reply signals are frequency modulated using a triangular function (see Col. 2, lines 66 - 67; Col. 3, lines 1 - 7 and 23 - 26; and Col. 7, lines 17 - 21). Upon receiving the reply signals, receiver 23 of the base unit, which is understood to be the evaluating and control unit (see Col. 3, lines 59 - 66), separates a number of superimposed signals from a plurality of transponders at different distances by evaluating a displacement spectra due to the difference distances from the base unit and evaluating collisions of the received reply signals (see Col. 3, lines 35 - 68 and Col. 4, lines 1 - 7).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify interrogator 26 of Wood, Jr., Waraksa, MacLellan, and Greeff as taught by Schrader because using a triangular function to frequency modulate the carrier

frequency enables interrogator 26 to determine the location of device 12 and to recognize device 12's response in the event that a plurality of responses are received simultaneously, thus enhancing the functionality of the system.

D. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood, Jr. U.S. Patent No. 6,265,963, Waraksa et al. U.S. Patent No. 5,412,379, MacLellan et al. U.S. Patent No. 6,130,623, and Greeff et al. U.S. Patent No. 6,169,474 as applied to claim 2 above, and further in view of LeMense U.S. Patent No. 5,710,548.

Regarding Claims 7 and 8, host computer 48 of Wood, Jr., Waraksa, MacLellan, and Greeff is unable to determine the distance between interrogator 26 and device 12 from the output signal from the demodulator unit.

In an analogous art, LeMense's transmitter direction identifier 10 or base unit comprises a first antenna 46, a second antenna 48, spatial differentiator 30, and control unit 32. Here it is understood that spatial differentiator 30, and control unit 32 form an evaluating and control unit. Per LeMense, antenna 46 and antenna 48 receive a coded signal from transmitter 18 or key unit, and spatial differentiator 30 creates a location signal from the coded signal (see Col. 2, lines 36 - 41 and Col. 3, lines 1 - 6). Because transmitter 18's signal is coded, implying that the signal is modulated, it is understood that receiver 20 has a demodulator. LeMense further teaches that the signals received at each antenna are individually analyzed and that the antenna with the highest correlation coefficient is selected to receive the remaining pulses from transmitter 18 (see Col. 4, lines 30 - 58). Microprocessor 58 is able to determine transmitter 18's proximity (or distance) and whether transmitter 18 is located on the driver side or passenger side (see Col. 3, lines 45 - 49 and Col. 4, lines 47 - 51). LeMense also states that two additional antennas can be used to further delineate the location of transmitter 18 (see Col. 4, lines 55 - 58).

E. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood, Jr. U.S. Patent No. 6,265,963, Waraksa et al. U.S. Patent No. 5,412,379, and MacLellan et al. U.S. Patent No. 6,130,623 as applied to claim 1 above, and further in view of Knebelkamp U.S. Patent No. 5,461,386.

Wood, Jr., Waraksa, and MacLellan teach an interrogator 26 that transmits an RF carrier signal but omit expressing that the interrogation signal is transmitted continuously.

In an analogous art, Knebelkamp's interrogator 12 transmits an interrogation signal either continuously or selectively (see Col. 7, lines 10 - 13).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify interrogator 26 of Wood, Jr., Waraksa, and MacLellan as taught by Knebelkamp because continuous transmission of an interrogation signal ensures that device 12 is immediately detected when it is within rang and that ID verification can begin promptly.

F. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood, Jr. U.S. Patent No. 6,265,963, Waraksa et al. U.S. Patent No. 5,412,379, and MacLellan et al. U.S. Patent No. 6,130,623 as applied to claim 1 above, and further in view of Lambropoulos U.S. Patent No. 5,838,257.

Wood, Jr., Waraksa, and MacLellan teach an interrogator 26 that transmits an RF carrier signal but omit expressing that the interrogation signal is transmitted at predetermined time intervals.

In an analogous art, Lambropoulos's vehicle transceiver C or base unit periodically transmits an interrogation signal (see Col. 2, lines 1 - 5 and 65 - 67; and Col. 4, lines 5 - 8).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify interrogator 26 of Wood, Jr., Waraksa, and MacLellan as taught by Lambropoulos because periodic transmission of an interrogation signal reduces power consumption at the base unit.

G. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood, Jr. U.S. Patent No. 6,265,963, Waraksa et al. U.S. Patent No. 5,412,379, and MacLellan et al. U.S. Patent No. 6,130,623 as applied to claim 1 above, and further in view of Kurozu et al. U.S. Patent No. 5,157,389.

Wood, Jr., Waraksa, and MacLellan teach an interrogator 26 that transmits an RF carrier signal but omit expressing that the interrogation signal is transmitted following a request signal.

In an analogous art, Kurozu's control unit 29 or base unit transmits an interrogation signal after door request switch (DRS) has been switched on (see Col. 5, lines 21 - 26). Here it is understood that the door request switch sends a request signal to control unit 29.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify interrogator 26 of Wood, Jr., Waraksa, and MacLellan as taught by Kurozu because only transmitting an interrogation signal after receiving a request signal prevents unnecessary transmissions of the interrogation signal, thus conserving energy at the base unit.

(11) Response to Argument

A. *Claims 1, 11, 14, and 15 recite subject matter that is unobvious*

The appellant argues that (1) Wood "shows only that back-scatter mode is therefore known" (see page 7); (2) Wood fails to show the "exchange of synchronous time information" (see page 7); (3) "neither Wood nor Waraksa show encoding by means of synchronous time

information" (see page 8); (4) "the combination of Wood and Waraksa is improper inasmuch as Wood involves a bi-directional system while Waraksa involves a unidirectional system" (see page 8); and (5) that "any combination of Wood, Waraksa, MacLellan, Knebelkamp, and Lambropoulos fails to suggest all of the features of the present invention" (see page 8).

First, in response to the appellant's argument that the references fail to show certain features of the appellant's invention, it is noted that the features upon which the appellant relies (i.e., "exchange of synchronous time information" and "encoding by means of synchronous time information") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Claim 1 simply calls for a key unit that transmits information to a base unit, wherein the key unit's and base unit's information periodically changes based on a predetermined coding rule. Encoding data with time information and exchanging time information are not required.

Secondly, in response to the appellant's argument on page 8 that "the combination of Wood and Waraksa is improper inasmuch as Wood involves a bi-directional system while Waraksa involves a unidirectional system", the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, those of ordinary skill in the art would recognize that it would be difficult for a would-be thief to determine device 12's authorization code if Wood's device 12 changes its code at predetermined intervals as taught by Waraksa.

Thirdly, Wood discloses an interrogator 26 and a device 12, wherein interrogator 26 is installed in a vehicle and can control the locks and device 12 can be used as a key fob to impeded car theft (see Col. 19, lines 53 - 64). In addition to teaching backscatter, Wood teaches using the Direct Sequence Spread Spectrum (DSSS) communications scheme when interrogator 26 communicates with device 12 (see Col. 13, lines 46 - 58). As it is known to those of ordinary skill in the art of wireless communications, DSSS uses a code that is independent of a data sequence in order to accomplish spectrum spreading prior to transmission. The same code is used in a receiver, which is synchronous to the transmitter, to despread the received signal so that the original data sequence may be recovered. In other words, Wood's interrogator 26 and device 12 both have "respective accurately-timed digital generators running essentially synchronously with respect to one another" as required by Claim 1. However, Wood only teaches encoding data with one Barker code (see Col. 14, lines 11 - 13 and Col. 15, lines 4 - 6) and using one "chip" sequence for spreading the data (see Col. 13, linse 57 - 59) instead of a code that changes at predetermined intervals. Furthermore, though interrogator 26 is able to determine if the data received from device 12 is valid (see Col. 19, lines 56 - 60), Wood fails to expressly teach that interrogator 26 encodes predetermined data with the Barker code and compares device 12's encoded data with the encoded predetermined data when determining whether device 12's data is valid.

In an analogous art, Waraksa, on the other hand, teaches using a rolling code, i.e., a code that is continuously changing approximately every 5 seconds, for a keyless entry system of a vehicle (see Col. 2, lines 38 - 43; Col. 8, lines 46 - 52; and Col 13, lines 61 - 67). In order to deter theft, Waraksa teaches using a CLOCK code that has been synchroized in both a beacon/transmitter 24 and a vehicle receiver/controller (see Col. 10, lines 33 - 39). This CLOCK

code, which is exclusively-ORed with a 20-bit IDENTIFICATION code, is updated at a set interval rate (see Col. 11, lines 5 - 31). By modifying Wood's system such that interrogator 26's and device 12's information changes at predetermined intervals as taught by Waraksa results in more a rigorous security system since a continuously change code deters theft (see Waraksa, Col. 10, lines 33 - 37).

Finally, with respect to the argument on page 8 that "any combination of Wood, Waraksa, MacLellan, Knebelkamp, and Lambropoulos fails to suggest all of the features of the present invention", the combination Wood and Waraksa as previosuly explained, discloses interrogator 26 and device 12 changing their digital information at predetermined time intervals. Because MacLellan teaches two devices that simultaneously generate and compare coded information, the combination of Wood, Waraksa, and MacLellan teaches the limitations of Claims 1 and 11. In addition, the limitations of Claims 14 and 15 are taught by further combining Wood, Waraksa, and MacLellan with Knebelkamp and Lambropoulos respectively.

B. *Claims 2, 4 – 6, 10 and 17 recite subject matter that is unobvious*

The appellant reiterates the same arguments as those concerning Claims 1, 11, 14, and 15, i.e., that: (1) Wood teaches only backscatter (see page 10); (2) Wood fails to teach exchanging synchronous time information (see page 10); (3) the combination of Wood and Waraksa is improper (see page 11); and (4) "neither Wood nor Waraksa show encoding by means of synchronous time information" (see page 11). The examiner maintains the same responses as described in Section 11(A) to the arguments.

In response to the argument on page 11 that any combination of Wood, Waraksa, and MacLellan with Greeff fail to suggest all of the limitations of the present invention, the combination of Wood, Waraksa, and MacLellan teaches the limitations of Claim 1 as explained

above in Section 11(A). In an analogous art, Greeff teaches connecting a radio frequency (RF) generator to a power amplifier, which is connected to an antenna (see Fig. 7 and Col. 9, lines 8 - 10). By combining Wood, Waraksa, and MacLellan with Greeff, all the limitations of Claims 2, 4 - 6, 10, and 17 are taught.

C. *Claims 3 and 9 recite subject matter that is unobvious*

The appellant reiterates the same arguments as those concerning Claims 1, 11, 14, and 15, i.e., that: (1) Wood teaches only backscatter (see page 13); (2) Wood fails to teach exchanging synchronous time information (see page 13); (3) the combination of Wood and Waraksa is improper (see page 14); and (4) "neither Wood nor Waraksa show encoding by means of synchronous time information" (see page 14). The examiner maintains the same responses as described in Section 11(A) to the arguments.

On page 15, the appellant argues that Wood, Waraksa, MacLellan, Greeff, and Schrader fail to teach all the features of the present invention. However, as explained above in Section 11(A), Wood, Waraksa, and MacLellan teach all the limitations in Claim 1. By combining Wood, Waraksa, and MacLellan with Greeff, all the limitation in Claim 2 are taught, as explained above in Section 11(B). In an analogous art, Schrader teaches using a triangular function to frequency modulate signals to a base unit (see Col. 2, lines 66 - 67; Col. 3, lines 1 - 7 and 23 - 26; and Col. 7, lines 17 - 21). Therefore, the combination of Wood, Waraksa, MacLellan, Greeff, and Schrader teaches all the limitations of Claims 3 and 9.

D. *Claims 7 and 8 recite subject matter that is unobvious*

The appellant reiterates the same arguments as those concerning Claims 1, 11, 14, and 15, i.e., that: (1) Wood teaches only backscatter (see page 17); (2) Wood fails to teach exchanging synchronous time information (see page 17); (3) the combination of Wood and Waraksa is

improper (see page 18); and (4) "neither Wood nor Waraksa show encoding by means of synchronous time information" (see page 18). The examiner maintains the same responses as described in Section 11(A) to the arguments.

In response to the argument on page 18 that Wood, Waraksa, MacLellan, Greeff, and LeMense fail to teach all the features of Claims 7 and 8, the combination of Wood, Waraksa, and MacLellan, as explained above in Section 11(A), teaches all the limitations of Claim 1. By combining Wood, Waraksa, and MacLellan with Greeff, the limitations of Claims 2, 4, and 5 are taught as described in Section 11(B); however, Wood, Waraksa, and MacLellan with Greeff are silent on (1) host computer 48 (or an evaluating and control unit) determining the distance between interrogator 26 (or base unit) and device 12 (or key unit) and (2) interrogator 26 having a plurality of antennas. In an analogous art, LeMense's transmitter direction identifier 10 (or base unit), which is located in a vehicle, comprises a first antenna 46, a second antenna 48, spatial differentiator 30, and control unit 32 for determining the location of transmitter 18 (see Fig. 2). Per LeMense, when a signal is received from transmitter 18, microprocessor 58 determines the correlation coefficient at antenna 46 and then determines the correlation coefficient at antenna 48. The correlation coefficient indicates the proximity or distance between transmitter 18 and transmitter direction identifier 10. In other words, the higher the correlation coefficient, the closer transmitter 18 is to transmitter direction identifier 10. (See Col. 4, lines 30 - 51.) Hence, the combination of Wood, Waraksa, MacLellan, Greeff, and LeMense teaches all the limitations of Claims 7 and 8.

E. *Claim 16 recites subject matter that is unobvious*

The appellant reiterates the same arguments as those concerning Claims 1, 11, 14, and 15, i.e., that: (1) Wood teaches only backscatter (see page 20); (2) Wood fails to teach exchanging

synchronous time information (see page 20); (3) the combination of Wood and Waraksa is improper (see page 21); and (4) "neither Wood nor Waraksa show encoding by means of synchronous time information" (see page 21). The examiner maintains the same responses as described in Section 11(A) to the arguments.

In response to the argument on page 21 that Wood, Waraksa, MacLellan, and Kurozu fail to teach all the features of Claim 16, the combination of Wood, Waraksa, and MacLellan discloses all the limitations of Claim 1, as explained above in Section 11(A). Kurozu teaches a control unit that transmits an interrogation signal after receiving a request signal from a door request switch (see Col. 5, lines 21 - 26). Thus, the combination of Wood, Waraksa, MacLellan, and Kurozu teaches all the features of Claim 16.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

CY
March 23, 2004 cy

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